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ABSTRACT

Placement in a non-college curriculum track may cause losses in self-esteem and increased delinquency. A nationally representative, longitudinal sample of over 1600 high school boys was examined by means of a status attainment perspective to conceptualize tracking influences on delinquency, and by path models to explore assumptions about the development of status and delinquency. Data from ability and academic skill measures, questions about family characteristics, measures of self-concept, values, educational and occupational plans, and self-reports of delinquent and non-delinquent behavior were analyzed to assess changes in delinquency associated with curriculum tracking from 10th grade to 12th grade and 1 year post-high school. Results indicated that curriculum tracking was an important determinant of subsequent educational outcomes. However, results strongly suggested that curriculum tracking did not change the probability of delinquency involvement during high school when prior levels of delinquency were controlled. Non-college track placement did not appear to lower self-esteem or cause delinquency. (Author/NRB)

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CURRICULUM TRACKING AND DELINQUENCY:

TOWARD AN INTEGRATION OF EDUCATIONAL AND DELINQUENCY RESEARCH

Grant No. NIE-G-80-0113

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through four programs to achieve its objectives. The Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelation of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

This report, prepared by the Studies in Delinquency and School Environments program, examines the influence of a school structural process--curriculum tracking--on student self-esteem and subsequent delinquency.

Abstract

The hypothesis that placement in a non-college curriculum track causes losses in self-esteem and increased delinquency was examined in a nationally representative, longitudinal sample of over 1600 high school boys. The status attainment perspective from the sociology of education was used to conceptualize tracking influences on delinquency suggested by delinquency theories, and path models were employed to explore various assumptions about the development of status and delinquency. The determinants of status attainment were similar to results of earlier research--that is, non-college track placement generally resulted in lower educational and occupational aspirations. However, the results did not support the findings of earlier cross-sectional and correlational research that non-college track placement would lower self-esteem and cause delinquency. Instead, delinquency in the senior year of high school and one year after graduation were best predicted by sophomore levels of delinquency. These results suggest that research on causes of delinquency among boys needs to examine socialization processes and school experiences occurring earlier than high school.

Acknowledgment

The data used in this research were provided by the Inter-University Consortium for Political and Social Research and were originally collected by Jerald Bachman. These sources are not, of course, responsible for the analyses or interpretations presented here.

Note on the Authors

Michael D. Wiatrowski, previously with the Studies in Delinquency and School Environments program at CSOS, is now with Florida Atlantic University in Boca Raton, Florida. Steve Hansell is with the School Organization program at CSOS. Charles R. Massey and David L. Wilson are with Florida Atlantic University.

Curriculum track placement in high school is an important determinant of whether students go to college and achieve high status occupations. Moreover, this selection process may have important implications for the causes of delinquent behavior because curriculum tracking has been shown to be correlated with rates of delinquency (Schafer and Polk, 1972). Students in non-college curricula are believed to suffer losses in social status in school, decreased commitment to educational goals, lower self-esteem and poorer self-concepts, and are thus more likely to become delinquent than college-bound students (Polk, 1975; Schafer and Polk, 1972; Schafer et al., 1972; Kelly and Pink, 1973; Messerschmidt, 1979; Kelly, 1976; Pink, 1979).

The research on the association between tracking and delinquency has been done largely outside of the sociology of education and has lacked the methodological sophistication and rigorous statistical controls characteristic of the study of educational and occupational aspirations and achievement. In addition, most delinquency research has been cross-sectional and could not investigate the causal effects of tracking on the development of delinquent behavior. The purpose of this research is to use a multivariate model derived from status attainment research to explore the effects of curriculum tracking on delinquency in a large-scale, nationally representative longitudinal sample.

Curriculum Tracking and Status Attainment

The socialization of students into productive adult roles has been conceptualized as a function of individual characteristics such as achievement and characteristics of school organization such as curriculum place-

ment. Two current theoretical models of schools as social organizations (Kerckhoff, 1976) may have important implications for delinquency research. Briefly, the socialization model assumes that schools track students according to their individual abilities and achievements and their educational and occupational aspirations. The allocation model, in contrast, views schools as societal gatekeepers that allocate scarce educational and social resources according to student social class and other ascribed status characteristics.

In the socialization model individual aspirations and mental abilities are believed to be the most important predictors of educational outcomes and are mediated by school characteristics (Blau and Duncan, 1967; Sewell et al., 1969). Initial research guided by this model sought to determine the relative contributions of social class and ability to educational and occupational attainment (Blau and Duncan, 1967). Later elaborations of the model added educational and occupational aspirations as mediators of achievements in these areas (Alexander, Cook and McDill, 1978).

The allocation model differs from the socialization model by arguing that school organization factors and ascribed student characteristics are more important in the status attainment process than abilities and aspirations. According to the allocation model, external status characteristics such as family background are the primary determinants of access to educational resources. In this model, the effects of curriculum tracking are thought to operate independently of the socialization and interpersonal processes which are central concepts in the socialization model (Kerckhoff, 1976).

Recent attention has focused on the contributions of individual social

class and ability to placement in a school curriculum because this dimension of school organization takes different roles in the socialization and allocation models. Researchers have also sought to document the social psychological effects of curriculum placement on self-esteem, aspirations and later achievements (Alexander and Eckland, 1975; Alexander and McDill, 1976; Hauser et al., 1976; Alexander et al., 1978).

Curriculum Tracking and Delinquency

The educational and occupational outcomes affected by curriculum tracking are of special interest to the delinquency researcher. Track placement helps determine access to educational resources, opportunities to associate with specific types of peers, and levels of academic aspirations and self-esteem (Alexander and McDill, 1976; Alexander et al., 1978). Students in college preparatory tracks, compared to students in general or vocational tracks, interact with peers who are less likely to have delinquent values, are more likely to have conventional educational and occupational aspirations, and tend to behave normally. The social interactions of college-bound students tend to reinforce their beliefs in conventional social norms. In contrast, students in non-college tracks are more likely to be members of deviant peer groups in which academic achievement is less highly valued.

Delinquency research on track placement has roughly paralleled educational research on status attainment, although cross-fertilization and communication have been rare. For example, Schafer et al. (1972) reported that non-college track placement is positively correlated with delinquent behavior. Kelly (1976) reported that placement in a non-college track was related to cutting classes, the frequency of school probations and expulsions

and delinquency. Kelly (1975; 1976) also argued that social class is less important than curriculum track in predicting delinquency outcomes and that curriculum placement decreases the self-esteem and undermines the self-concepts of students in non-college bound tracks.

These studies suggest an important role for curriculum tracking in understanding the development of delinquency in high school, but they report mainly zero-order correlations and fail to specify how multiple factors operate together to cause delinquent behavior, unconventional aspirations, or school failure. Furthermore, the generally cross-sectional design of these studies precludes controls for initial levels of school success and delinquency which may exist prior to the effects of school tracking. For example, it is difficult to determine how much of the involvement in delinquent behaviors reported by Schafer et al. (1972) was due to exogenous variables and how much was caused by curriculum tracking. College track students were found to have higher grades than non-college track students, even with IQ, social class, and ninth-grade academic achievement controlled. Schafer et al. (1972) reported small differences in the rates of delinquency for college and non-college bound boys, but the failure to control for social class, ability, grades, and school organization makes it difficult to differentiate causal effects of curriculum tracking from these factors. Additionally, in the few studies in which delinquency prior to high school has been controlled, the effects of curriculum tracking, contrary to the hypothesis, have tended to be small (e.g., Schafer et al. , 1972).

These results are intriguing, because they suggest that curriculum placement affects a wide range of social psychological processes and educational outcomes. However, the delinquency research in this area generally

suffers from conceptual and methodological problems. Delinquency researchers tend to use simple correlational methods to examine the relative contributions of social class and ability to curriculum placement and subsequent effects on delinquency. Most existing studies therefore provide little insight about the relative merits of the selection and allocation models of status attainment for investigating the causes of delinquency.

The present research uses the multivariate approach of status attainment research to investigate the effects of curriculum tracking on delinquency The simultaneous test of the effects of curriculum tracking and other individual and school characteristics in a nationally representative longitudinal sample will reveal whether this dimension of school organization has independent effects on delinquency, and may provide insights about the social psychological processes responsible for such a relationship.

Method

This study used Youth in Transition data collected by Bachman (1975). Five longitudinal sets of interviews were collected from a stratified nationally representative sample of high school males. Initially 2213 black and white males were interviewed in the fall of 1966 as they entered tenth grade. They were subsequently surveyed at the end of the eleventh grade, with 1886 responding. The sample was again surveyed just prior to graduation, with 1799 respondents; and in June and July of 1970, one year after graduation, with 1620 respondents. A fifth wave of surveys was administered in 1974 but were not used in the present analysis.

Interview and survey instruments included tests of ability and academic skills, questions about family characteristics, measures of self-concept, values, educational and occupational plans, and self-reports of

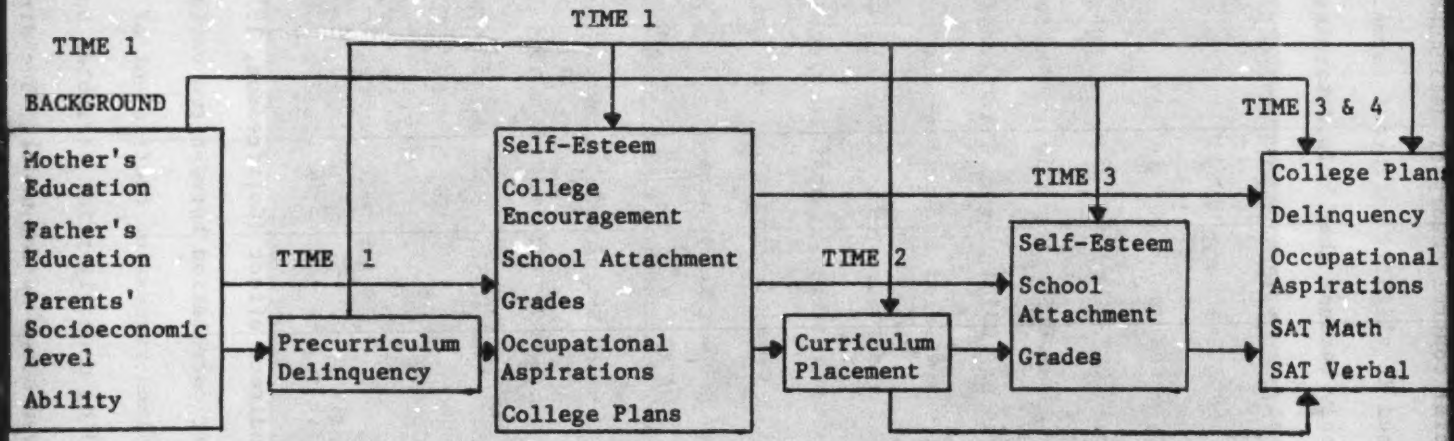
delinquent and non-delinquent behavior. The present analysis used these data to assess changes in delinquency caused by curriculum tracking from the sophomore to the senior year and one year out of high school.

The theoretical model used in this analysis was derived from Alexander et al. (1978) and is shown in Figure 1. The major advantage of this model is that the cumulative effects of ability, social class, and other student characteristics on track placement can be assessed, and then the direct and indirect effects of these variables on delinquency and status attainment outcomes can be tested. The causal ordering of the variables was determined primarily by the chronological order of data collection. However, the background factors of parental education, socio-economic status and ability were assumed to be exogenous variables and to affect delinquency and other outcomes, such as cognitive and social psychological development (cf. Hirschi and Hindelang, 1977), measured in each wave. Sophomore delinquency was controlled in the analysis of senior and post-graduate delinquency to provide a test of the effects of tracking on the development of delinquency during high school.

A self-esteem index was incorporated in the third stage of the model to test Kelley's (1975) hypothesis that non-college placement decreases self-image, and increases subsequent delinquency. School attachment is a measure of both positive and negative affect toward school and also indicated students' school commitment. Kelly and Pink (1971) and Hirschi (1969) have suggested that students who are committed to academic goals are less likely to be delinquent than uncommitted students, controlling for ability and achievement. College encouragement and educational and occupational aspirations are elements of both status attainment research

Figure 1

Structural Model of Curriculum Influences on Status Attainment and Delinquency



and of Hirschi's (1969) social control theory of delinquency, although they have been conceptualized in slightly different terms. Grades were included in the model not only because they help determine access to college (Sewell et al., 1969), but also because they help predict delinquency (Hirschi, 1969; Silberberg and Silberberg, 1971).

Curriculum track was assessed in the second wave of data collection in the spring of the eleventh grade, and was added to stage four of the model. Track placement was assumed to be stable throughout the high school years, and although there was no indication of when students were placed in curriculum tracks, tracking was assumed to be in effect before or during the sophomore year,[1] when the first wave of data was collected. Students were asked whether they were in a college preparatory, vocational, business, general, agricultural or other type of curriculum, and responses were recoded to contrast college-bound youth with all others.[2]

The dependent variables were chosen to represent delinquency and status attainment outcomes of the educational process. The delinquency measures used in this study were derived from Gold's (1966) scales of self-reported delinquent behavior.[3] Descriptions of specific measures of the major variables appear in the Appendix.

Path analysis was used to analyze the model described in Figure 1. Central concepts in this analysis are the terms total association, total effect, direct effect and indirect effect (Gottfredson, 1978). The total association is the zero-order correlation between two variables, while the total effect is the standardized regression coefficient of a variable in a regression equation including causally prior variables but not any mediating variables at a given stage of the model. The direct effect is

the standardized regression coefficient in a regression equation which included all potential explanatory variables. An indirect effect represents the influence of mediating variables and is calculated as the difference between the direct and total effects.

Analysis

The first section of the analysis focused on the effects of curriculum tracking on aspirations and achievement. The results of this analysis generally agreed with the results of earlier status attainment research. The contribution of tracking to involvement in delinquency is presented in the second section, and yielded results markedly different from those reported in the delinquency literature.

Curriculum Placement and Status Attainment

Track placement was assumed to occur in junior high school, prior to the first wave of data collection. However, student characteristics collected in the initial interviews in the sophomore year can be examined for the antecedents of tracking if it is assumed that these characteristics are relatively stable and roughly similar to their characteristics when curriculum placement actually occurred. This analysis is shown in Table 1.

Student social class background and ability had large total effects on the curriculum track in which high school males were enrolled. Students with more ability and higher social class tended to be placed in college-bound tracks while their less advantaged counterparts tended to be in non-college curricula. The direct effects of these variables were somewhat smaller, but still highly significant. Other significant predictors of curriculum tracking were grades and educational and occupational aspirations, which all contributed positively to placement in a college-bound

Table 1

Decomposition of Effects for Status Attainment Model

	Curriculum 2		School Attachment 3		Self-Esteem 3		Grades 3		College Plans 3		Occupational Aspirations 3	
	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct
Background	.27**	.19**	.02	-.02	.06*	.02	.06*	.03	.27**	.14**	.25**	.13**
Ability	.32**	.15**	.12**	-.02	.11**	.00	.41**	.22**	.21**	-.03	.33**	.11**
Delinquency 1	-.05*	.02	-.23**	-.06*	-.05	.07**	-.13**	-.03	-.10**	-.00	-.13**	-.07**
Self-Esteem 1	.04	.04	.09**	.09**	.47**	.47**	.08**	.08	.06*	.03	.04	.01
College Encouragement 1	.04	.04	-.02	.02	.04	.04	.04	-.04	.12**	.11**	.07*	.07*
School Attachment 1	.03	.03	.38**	.38**	.07*	.07*	-.04	.04	.06	-.01	-.01	-.05
Grades 1	.16**	.16**	.15**	.14**	.07**	.07**	.43**	.43**	.19**	.11**	.17**	.11**
College Plans 1	.14**	.14**	.01	.01	.01	.01	.06*	.05	.17**	.13**	.06**	.04
Occupational Aspirations 1	.15**	.15**	-.04	-.05	-.05	-.05	-.03	-.03	.11**	.09**	.24**	.23**
Curriculum 2			.01	.01	.00	.00	.03	.03	.20**	.20**	.15**	.15**
School Attachment 3									.14**	.14**	.10**	.10**
Self-Esteem 3									.03	.03	.02	.02
Grades 3									.07*	.07*	.04	.04
R^2	.34		.25		.27		.38		.36		.39	

Note. Standardized betas are shown. Numbers following variable names indicate wave of data collection

*p < .05
**p < .01

track. The model shown in Figure 1 accounted for 34% of the variance in tracking, which is comparable to the proportion of variance (28%) reported by Alexander et al. (1978) in their test of a similar status attainment model. Also, ability and social class background influenced track placement about equally.

Table 1 also shows the effects of student characteristics and curriculum placement on educational and occupational aspirations.[4] Among the best predictors of these aspirations in the senior year were the aspirations held in the sophomore year. Also, social class background, ability, and curriculum had relatively strong effects on both educational and occupational aspirations. However, the results also suggested that the mechanism through which these effects work is complicated. The total effects of ability and background were large, but the direct effects declined, indicating that these factors operate through mediating variables. For example, upper class parents teach their children to value higher educational and occupational aspirations, as evidenced by the determinants of parental encouragement to attend college.

Delinquency in the sophomore year had moderate total effects on both kinds of aspirations in the senior year, but no direct effect on college plans and only a weak direct effect on occupational aspirations. Delinquent students tended to have slightly lower occupational aspirations than their nondelinquent peers.

Except for the addition of sophomore delinquency as a predictor, this model of aspirations is similar to the one employed by Alexander et al. (1978). Our results are generally similar to the finding that curriculum tracking was an important determinant of subsequent educational outcomes.

Also, the proportion of variance in aspirations explained by our model was comparable to their results. Our model accounted for 36% of the variance in senior educational aspirations and 39% of the variance in their occupational aspirations, compared to 40% of the variance in senior educational aspirations reported by Alexander et al. (1978).

Curriculum Placement and Delinquency

The longitudinal analysis of the effects of curriculum tracking on delinquency did not agree with the prior correlational evidence presented by Schafer and Polk (1972) and Kelly (1976). First, the correlational evidence displayed in Table 2 indicated large total associations between tracking and a wide range of variables, but not with delinquency. Curriculum placement was correlated -.07 with delinquency measured in the tenth grade, -.10 with delinquency measured in the senior year, and -.09 with the frequency and -.08 with the seriousness of delinquency measured one year after high school. Given the large sample size, these correlations are all significant at $p < .05$, but they are so small that they indicate a negligible tendency for college-bound students to be less delinquent than students in the non-college tracks.

The elaboration methods used by some delinquency researchers have allowed only weak causal models to be studied. Also, the specification of their models can be seriously questioned in cases in which curriculum track is treated as an exogenous variable. A more reasonable approach, used in this research, is to treat track placement not simply as an arbitrary decision made by educational administrators, but as the result of prior variables such as student social class background, ability, grades, college plans, and occupational aspirations.

Table 2

Correlations among Status Attainment and Delinquency Variables

	BACK	ABIL	DEL 1	SE 1	SA 1	GR 1	OA 1	CE 1	CP 1	CUR 2	SA 3	SE 3	GR 3	CP 3	OA 3	DEL 3	FRE 4
ABIL	.36																
DEL 1	-.02	-.04															
SE 1	.15	.18	-.20														
SA 1	.16	.22	-.38	.45													
GR 1	.19	.42	-.17	.23	.28												
OA 1	.35	.41	-.10	-.08	.33	.32											
CE 1	.24	.23	-.06	-.03	.23	.18	.35										
CP 1	.29	.31	-.13	-.10	.29	.26	.59	.36									
CUR 2	.39	.41	-.07	.20	.24	.36	.44	.26	.40								
SA 3	.01	.07	-.23	.27	.45	.21	.09	.08	.10	.10							
SE 3	.10	.13	-.06	.50	.27	.18	.10	.12	.12	.13	.37						
GR 3	.21	.44	-.14	.24	.26	.56	.26	.13	.25	.31	.27	.21					
CP 3	.35	.31	-.12	.23	.28	.36	.41	.32	.41	.45	.23	.20	.33				
OA 3	.37	.42	-.15	.21	.25	.39	.49	.49	.38	.45	.25	.17	.34	.51			
DEL 3	-.06	-.12	.48	-.16	-.12	-.19	-.06	-.04	-.06	-.10	-.32	-.15	-.26	-.17	-.16		
FRE 4	-.01	-.11	.37	-.12	-.09	-.13	-.09	-.01	-.06	-.09	-.21	-.08	-.18	-.15	-.15	.50	
SER 4	-.00	-.09	.37	-.08	-.09	-.12	-.06	-.04	-.06	-.08	-.14	-.06	-.13	-.12	-.15	.45	.78

Note. Correlations are based on n's greater than 1000. For this n, correlations greater than or equal to .05 are significant at $p < .05$. Variable symbols are: background (BACK), ability (ABIL), delinquency (DEL), self-esteem (SE), school attachment (SA), grades (GR), occupational aspirations (OA), college encouragement (CE), college plans (CP), curriculum (CUR), frequency of delinquency (FRE), seriousness of delinquency (SER). Numbers after variable names refer to waves of data collection.

The effects of curriculum placement on delinquency in the senior year and one year after high school were assessed using the status attainment model shown in Figure 1. In the first three regressions, shown in Table 3, the initial levels of delinquency reported in the sophomore year were included as control variables. These regressions therefore assessed changes in delinquency during the high school years in which tracking was assumed to be in effect.

As expected, sophomore levels of delinquency had large total and direct positive effects on delinquency rates in both the senior year and one year out of high school. Also, the changes in delinquency involvement during the study were negatively affected by students' mental abilities, although the direct effects were not as strong as the total effects, indicating the influence of mediating variables. This result agreed with evidence reported by Hirschi and Hindelang (1977) that intelligence is negatively related to delinquency involvement. Finally, senior school attachment and grades had strong negative direct effects on delinquency measured in the senior year.[5] Measures of the seriousness and frequency of delinquency obtained one year after high school revealed a similar but weaker pattern of results.

The inclusion of curriculum tracking in the model did not improve it significantly. The change in delinquent behavior from the sophomore year to the senior year and one year out of high school was not significantly predicted by curriculum track. This finding accords with the low correlations of curriculum track with delinquency shown in Table 2. Taken together, these results strongly suggest that curriculum tracking does not change the probability of delinquency involvement during high school when prior levels of delinquency are controlled.

Table 3

Decomposition of Effects on Delinquency Outcomes

	Delinquency 3		Frequency of Delinquency 4		Seriousness of Delinquency 4		Delinquency 3[a]		Frequency of Delinquency 4[a]		Seriousness of Delinquency 4[a]	
	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct
Background	-.01	-.01	.02	.03	.03	.04	-.01	-.00	.02	.04	.03	.04
Ability	-.12**	-.04	-.12**	-.07**	-.10**	-.05	-.12**	-.01	-.12**	-.04	-.10**	-.03
Delinquency 1	.47**	.45**	.36**	.38**	.36**	.38**	--	--	--	--	--	--
Self-Esteem 1	-.04	-.00	-.07*	-.04	-.02	-.00	-.06*	-.03	-.08*	-.07	-.03	-.03
School Attachment 1	.00	.10**	.12**	.19**	.10**	.13**	-.16**	-.04	-.01	.06	-.04	.00
Grades 1	-.09**	-.00	-.04	-.01	-.04	-.00	-.13**	-.03	-.08*	-.01	-.09**	-.04
Occupational Aspirations 1	.01	.00	-.07*	-.08*	-.02	-.02	.03	.01	-.05	-.06	-.00	-.01
College Encouragement 1	.00	.00	.02	.01	-.01	-.01	.02	.01	.03	.02	-.00	-.00
College Plans 1	.04	.05	.03	.04	.02	.03	.01	.02	.01	.02	.00	.00
Curriculum 2	-.03	-.02	-.03	-.02	-.03	-.03	-.02	-.01	-.02	-.02	-.03	-.02
School Attachment 3	-.21**	-.21**	-.16**	-.16**	-.08*	-.08**	-.25**	-.25**	-.19**	-.19**	-.11	-.11
Self-Esteem 3	-.04	-.04	-.00	-.00	-.02	-.02	.00	.00	.03	.03	-.01	-.01
Grades Time 3	-.14**	-.14**	-.09**	-.09**	-.05	-.05**	-.15**	-.15**	-.10**	-.10**	.06	.06
R^2	.31		.19		.16		.14		.07		.04	

*$p < .05$

**$p < .01$

[a]Delinquency 1 deleted from the regression equation

Note. Standardized betas are shown.

The inclusion of sophomore delinquency in the model may have accounted for enough variance in the dependent variable to obscure the potential effects of tracking on later delinquency involvement. Therefore the model was recomputed without the control for sophomore delinquency and the results are presented in the last three columns of Table 3. As a result of this analysis, the explained variance in high school delinquency was markedly decreased on all three measures. Also, the direct effects of ability disappeared. However, senior year school attachment and grades had strong negative direct effects on senior year delinquency, and slightly weaker but still significant effects on the frequency of delinquency one year after high school.

The most important point for this analysis is that even with initial levels of delinquency excluded, curriculum tracking did not significantly contribute to the incidence of delinquent behavior in the senior year or after high school. Tracking had no total or direct effects significantly different from zero. Thus, these results can be regarded as robust. Tracking did not affect delinquency whether or not previous levels of delinquency were included in the model.

Discussion

The results of this analysis did not support the hypothesis that curriculum tracking influences delinquent behavior in high school. The zero-order negative correlations between delinquency and curriculum track were significant given the large sample size, but were too low to be important. When curriculum placement was included in multivariate models of delinquency causation, it did predict status attainment outcomes in agreement with prior research, but did not significantly affect any of the several measures of delinquency.

These results raise serious doubts about the causal relationship between tracking and delinquency in high school because this study had three major advantages over previous research. First, the Youth in Transition data were collected from a nationally representative sample of boys, so the present results were not likely to be a result of geographic or sampling bias. Second, the subjects were surveyed longitudinally through their high school careers, so the analyses supported stronger inferences about the development of delinquency than would be possible using a cross-sectional design. Finally, the conceptual model employed in this research reflected the relative complexity of status attainment models, and allowed the simultaneous testing and elimination of alternative explanations of the results. We can conclude, for example, that these results were not an artifact of students' mental abilities, social class backgrounds, levels of self-esteem, achievement, or their educational and occupational aspirations.

This study did have several limitations which may affect the generalizability of the results. First, it is possible that the model was incorrectly specified and that some variable which was not included would change the results. However, we included the major variables known to be the theoretically important and related to curriculum placement and delinquency. The model was reasonable given our present state of knowledge, and substantially more comprehensive than others in this area. Second, there was a conceptual ambiguity of the kind often found in secondary analyses. Although tracking was measured during the junior year, it was not known when tracking had actually occurred. We made the operating assumption that the sample was tracked in junior high school, before they were first surveyed

in the sophomore year. Because of this, the analysis of the determinants of tracking must be interpreted with caution. However, this was not a problem in the analysis of curriculum tracking effects on delinquency in the senior year and one year out of high school for which the causal order of variables in the model was unambiguous. Finally, the sample included only males and the results cannot be assumed to apply to females. These limitations are relatively minor, and we can be confident that the results of this study generally represent the relationship between tracking and delinquency for high school males.

These results have important implications for delinquency and educational research. First, the allocation model stating that social class distributes scarce educational resources on the basis of ascribed social characteristics was supported. Second, although the total effects of initial delinquency on senior educational and occupational aspirations were significant, they were mediated by the effects of other status attainment variables in the model. Also, tracking did influence educational and occupational aspirations because students in a college track were more likely to want to go to college and achieve a high status occupation. However, neither delinquency nor self-esteem outcomes were affected by curriculum placement.

These results suggest that research about the role of schools in causing or preventing delinquency needs to search for the antecedents of delinquent behavior in junior high school and earlier. Because most tracking probably occurs in junior high school, that is when its effects on delinquency may be strongest. Also, there is some evidence that peer group influences on adolescents peak in junior high school (Gold and Petrano,

1980). Curriculum tracking creates differing opportunities for peers to associate, and its effects presumably operate through peer social interaction and influence processes. Moreover, the reanalysis of the Safe School Study victimization data by Gottfredson and Daiger (1979) implies that differences in junior high schools contribute to disruption, theft and assault problems. These facts, along with the results of the present study, suggest that the crucial determinants of delinquency have already exerted their influence by high school and may be set in motion well before the sophomore year. These results suggest the need for a reorientation of research efforts to school settings at the junior high or even elementary level.

The absence of major negative effects of tracking on delinquency in this study suggests that students are socialized to accept their eventual placement in a curriculum. The Youth in Transition data indicated that 87 percent of the respondents at the end of their junior year were satisfied with their curriculum. Of those who were not satisfied, 68 percent felt free to change programs. Delinquency was not therefore caused by alienation from nor dissatisfaction with curriculum placement.

However, there may be more complex aspects of curriculum tracking that contribute to delinquency. For example, Rosenbaum (1975) suggested that different tracks present students with qualitatively different environments. He characterized the college preparatory track as a setting in which self-direction and the expression of individual interests are encouraged. In contrast, non-college tracks provide a setting in which conformity is rewarded. Rosenbaum's case study points to potential consequences for peer relationships and possible influences on delinquency within each curriculum. There may be, for example, different bases of affiliation in

peer groups formed in the different curricula. Peer groups might be stratified according to academic or athletic achievement in college and non-college curriculum tracks, respectively. Tracking may affect peer relationships by determining both the opportunities for interaction and differentiated bases for status evaluation which may in turn affect the development of deviant values and behavior. Future research must develop a more complex view of the specific dimensions of tracking that might affect delinquency.

The results of this analysis should encourage the study of the effects of school organizational processes, such as tracking, with longitudinal data. Aspirations, attitudes toward school, parental encouragement and delinquency behavior do not spontaneously emerge in the sophomore year. Clearly, students receive information about their own intelligence and the desirability of high educational and occupational status long before high school. The socialization processes underlying these attitudes and behaviors undoubtedly occur in schools, families, and among peers, but just how those processes work and what the relative influences are from each of these sources remain unclear and need to be investigated.

Gold and Petrano (1980) have noted that the empirical base for the study of developmental and social pressures that lead to delinquency is inadequate. The scant evidence that is available about delinquency in childhood and early adolescence comes primarily from clinical studies of limited reliability and generalizability. Survey methods employing nationally representative samples should be used to study younger age groups. This would be especially valuable given current rapid changes in family and peer relationships and the changing structure of the educational

environment. The Simmons, Blythe, Van Cleave and Bush (1977) examination of early adolescent self-esteem and dating behavior in educational systems--those with separate junior high schools and those which go from kindergarten to grade 8--is an important example of research which attempts to understand both developmental and school organizational influences on adolescents. More of these kinds of studies should be done.

The social organization of schools is surely more complex than a simple curriculum tracking dichotomy implies, and our theories and measures need to be expanded accordingly. However, even relatively crude measures of school organization and climate have been shown to affect disruption and delinquent behavior in junior and senior high schools (Wiatrowski, Gottfredson and Swatko, 1980). Because much delinquency behavior exists prior to high school, the early antecedents of delinquency and disruptive behavior need to be examined with as much theoretical and methodological sophistication as we can muster.

Footnotes

1. Given the importance attributed to curriculum tracking for educational outcomes, we were surprised that we could find no studies which explicitly examined the stability of track placement and the grade levels when it usually occurs.
2. Students were asked, "What program or type of curriculum are you in at school?" Responses indicated that 42% of the sample were in a college preparatory program, 9% in a vocational, industrial arts or technical program, 5% in a commercial or business program, 32% in a general program, 3% in an agricultural program, and 2% in other programs.
3. It was necessary to use the scales presented in the Youth in Transition documentation because data on individual items were unavilable. The sophomore and senior delinquency scales measured total delinquency involvement. A total measure was not available one year our of high school, so scales measuring the frequency and seriousness of delinquency were used.
4. SAT scores were not included in the analysis because of severe multicollinearity problems which made the model impossible to estimate, and the fact that only slightly more than 20% of the sample reported SAT scores.
5. The mild suppressor effects for tenth grade school attachment in Table 3 are the result of including a highly correlated variable (senior school attachment) in the model. They should be given no substantive interpretation.

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Appendix

Description of Variables

	Variable	Description
(Sophomore)	Background	Scale formed from measure of mother's and father's education and socioeconomic level
	Ability	Scale formed from GATB Math and GATB Vergal scores.
	Delinquency I	Total Delinquency Index[a]
	School Attachment I	Scale formed from positive and negative school indices and Academic Achievement Index
	Self-Esteem I	Index
	Grades I	Grade Point Average
	Occupational Aspirations I	Duncan Scale
	College Encouragement I	1=yes 0=no
	College Plans I	1=attend college 0=other
(Junior)	Curriculum II	1=college 0=other
(Senior)	School Attachment III	Same as School Attachment I
	Self-Esteem III	Index
	Grades III	Grade Point Average
	College Plans III	1=attend college 0=other
	Occupational Aspirations III	Duncan Scale
	SAT Math	SAT Math scores
	SAT Verb	SAT Verbal scores
	Delinquency III	Total Delinquency Index
(1 year past High School)	Frequency of Delinquency IV	Frequency of Delinquency Index
	Seriousness of Delinquency IV	Seriousness of Delinquency Index

[a] Arithmetic indices are frequently used in the youth in transition data to form composite measures of specified dimensions. See Backman (1975) for more detail.

Note. Variable numbers refer to wave of data collection.